

REMARKS

In the Office Action, claims 1-10 were rejected. By the present response, claims 1, 3-6, and 8-10 are amended, and claims 2 and 7 are canceled. Also, new claims 11-14 are added. Upon entry of the amendments, claims 1, 3-6, and 8-14 will be pending in the present patent application. Reconsideration and allowance of all pending claims are requested.

Rejections Under 35 U.S.C. §112

The Examiner rejected claims 6-10 because the phrase "system" rendered the claims indefinite. Furthermore, the Examiner rejected claim 7 because of linking of claim 7 to method dependent claim 5. By the present response, claim 7 has been cancelled and the subject matter recited in claim 7 has been incorporated into claim 6. The dependencies of claims 8-10 have been corrected. No new subject matter has been added. Therefore, in view of the amendments, the Applicant respectfully requests that the rejections of claims 6, 8-10 under 35 U.S.C § 112 be withdrawn.

Rejections Under 35 U.S.C §101

The Examiner rejected claims 1-5 under 35 U.S.C §101 because, according to the Examiner, the claims are not in the technological arts and because one ordinarily skilled in the art could execute the process with ease. By the present response, the subject matter recited in claim 2 has been incorporated into claim 1 and claim 2 has been cancelled. Furthermore, claims 1, 3-5 have been amended to overcome their rejection under 35 U.S.C §101.

Prior Art Rejections.

Claims 1-10 were rejected under 35 U.S.C §102(b) as being anticipated in "Simulation of Gas Dynamics and Electromagnetic Process in High-Current Arc Plasmas" (hereinafter "Schlitz").

Claim 1 and the Claims Depending Therefrom.

By the present response, independent claim 1 is amended to include the recitation of claim 2 to more particularly point out and distinctly claim the recited subject matter. Dependent claims 3-5 are also amended.

Schlitz fails to disclose a method for modeling electric arc behavior within an arc chamber.

Amended claim 1 recites, *inter alia*, a method for modeling electric arc behavior comprising determining electrical conductivity distribution in an arc based upon a temperature distribution and a pressure distribution within an arc chamber. The method also includes determining a current density distribution of the arc based on the determined electrical conductivity.

The invention recited in claim 1, therefore, models electric arc behavior within an arc chamber. As will be appreciated by those skilled in the art, the electrical conductivity distribution and the current density distribution are further influenced by shape, by size, by gases present, and by various components within the arc chamber. The amendment to claim 1 includes recitation of certain components within the arc chamber, such as a stationary contact, a movable contact and a plurality of adjacent arc chute plates.

Applicant has carefully reviewed Schlitz and respectfully submits that Schlitz fails to teach modeling electric arc behavior within an arc chamber. A *prima facie* case of anticipation requires the teaching of each and every element of claim 1 by Schlitz. Applicant respectfully submits that in view of the amendments set forth above, independent claim 1 and claims depending therefrom are allowable and respectfully request the Examiner to reconsider rejection of the claims.

Claim 6 and the Claims Depending Therefrom.

Claim 6 was also rejected as being anticipated by Schlitz. By the present response, independent claim 6 is amended to include the recitation of claim 7 to more particularly point out and distinctly claim the recited subject matter. Claims 8-10 are amended.

Schlitz fails to disclose a system for modeling electric arc behavior within an arc chamber.

Amended independent claim 6 recites, *inter alia*, a system for modeling electric arc behavior. The system includes at least one computer configured to determine at least an electrical conductivity distribution in an arc within an arc chamber based upon a temperature distribution and a pressure distribution within the arc chamber in which are disposed a stationary contact, a movable contact and a plurality of adjacent arc chute plates. The at least one computer is further configured to determine a current density distribution of the arc based on the electrical conductivity distribution in the arc.

As discussed above with regards to the rejection of claim 1, Applicant respectfully submits that Schlitz fails to disclose a system for modeling electric arc behavior within the arc chamber. Applicant respectfully submits that in view of the amendments set forth above, independent claim 6 and the claims depending therefrom are allowable and respectfully request the Examiner to reconsider the rejection of the claims

New claims

New claims 11-14 have been added to recite computer readable media that include code adapted to determine at least the electrical conductivity distribution, the current density distribution, the joule heating, magnetic fields and the magnetic forces. As will be appreciated by those skilled in the art, while the present application discloses the use of the FLUENT program and the MagNet program to perform the necessary evaluations of various parameters within the arc chamber, any code adapted to perform similar

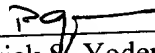
operations may be successfully employed in lieu of the specified programs. Consequently, claims 11-14 are believed to be in condition for allowance for at least the reasons summarized above with respect to claims 1 and 6. Their consideration and allowance are requested.

Conclusion

In view of the remarks and amendments set forth above, Applicant respectfully requests allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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